THE RELATION BETWEEN EMPLOYER AND EMPLOYEE[1]

There are two apparently opposite currents of thought today which permeate the fabric of almost every institution. On the one hand, the love for an existence free from any forced dictation from higher authorities, coupled with the feeling that every effort made by an individual is for the enhancement of his personal interests, attracts not a few people to espouse a philosophy which H. C. Hoover aptly calls *individualism*. On the other hand, the recognition of the fact that in order to manufacture products at lower cost and thus be able to compete with a rival community and extend the enjoyment of material culture to a greater number a concerted and systematic effort of many individuals is necessary, led capitalists to form huge combines and employ executives and technical men of the highest caliber at high salaries. The first doctrine, I believe, is the outcome of a desire for self-expression which had long been suppressed by a system which disregarded almost entirely the feelings of a majority for what is thought to be the common good; the second is the outcome of keen competition in war and in the world markets.

While there is much to be said in favor of individualism, there can not be any doubt as to the greater efficiency derived from concerted efforts, and it would be well-nigh suicidal for the Philippines, if at this period in its development, when it has played hardly any part in the industrial exploitation of its natural resources, concerted efforts are not made in every line of endeavor called for in our economic development. This is particularly true in technical and purely scientific investigation.

In order to obtain, however, the maximum work from every individual, foster a fine *esprit de corps* and at the same time allow each one to develop full self-expression, there are a few requirements that an employer may follow to his advantage:

(*a*) That in the selection of individuals for positions of responsibility, only those of tested creative ability and high sense of responsibility be considered;

(*b*) That promotion be based upon the amount of investigations completed and their possible application;

(*c*) That aside from promotions, exceptional meritorious services be rewarded with emoluments of both honorary and pecuniary nature;

[1] General contribution from the College of Agriculture No. 191. Received for publication August 10, 1927.

(*d*) That the salaries of the employees be set at a rate slightly higher than "starvation wages".

That the first requirement is of utmost importance is very evident. For an institution to turn out work which has a useful bearing upon the needs of the employer, the directive mind must possess not only a knowledge of these needs, but must also be endowed with the power to satisfy these needs. Originality, inventiveness, vision, the power to apply the oldest as well as the most recent principle discovered, and the ability to co-ordinate different lines of investigation and focus them on the problem at hand—these are the essentials of the leader. But we must not forget that in the discharge of his duties and in his attitude toward his superiors, his actions should be governed by his sense of loyalty to his employer and to his country, and by his sense of justice towards his subordinates.

It is generally recognized that merit should be the basis of promotion. But where the selection of the personnel is put in the hands of individuals who are not in direct connection with, or not directly responsible to the institution, a system sometimes arises where even the higher technical positions are filled by men incompetent to produce results expected of their positions. This is the essential difference between private institutions as the General Electric Company in the United States and government or state institutions as a university or a bureau. In the state institutions seniority is placed way above merit, resulting in dissatisfaction among the personnel and a possible acceptance by them of the philosophy of individualism.

In technical institutions where research is the "life-blood of their existence," the personnel are particularly careful in *recognizing merit where merit exists*. The employer could help in this by awarding meritorious services with some token of honor as a medal, or in some cases the conferring of an honorary degree or the giving of an honorary position. In some institutions as in the General Electric Company, new ideas, new inventions, in fact, anything that helps to improve its present products are given pecuniary awards.

I have already pointed out that the men of exceptional productivity are sometimes the very ones who leave an institution because of dissatisfaction with the system followed in the institution. In many cases, when the demand on the part of other institutions for men of their experience and training is great, they transfer to them. In the United States, men from universities and federal bureaus often leave them for employment in institutions where compensation is higher and responsibility greater. It may be pointed out, however, that the conditions in the United States do not as yet obtain here. In the United States the value of research work is fully recognized by commercial institutions, so that progress in science is carried on not only by the government but also by private institutions as well. To those who have the welfare of the Philippines at heart, it is dis-

couraging to think of our technical institutions being depleted of efficient men who accept more remunerative positions in industrial firms where facilities for investigation are meager—it is like killing the goose that lays the golden eggs.

Fortunately there are a few signs of hope for our technical personnel in our university and bureaus. The pension bill for civil service employees is a move in the right direction. The pension bill for university employees and the efforts now being made to allow sabbatical leave are in the same direction.

Furthermore, if in "lending" an employee to a private institution, his practical experience is greatly enhanced, thus enabling him not only to increase his earnings but also to increase his mental equipment and productivity, the employer should not only welcome such an arrangement, but encourage it.

It may now be asked, "what are the duties of the employee to the employer?" At the outset it may be pointed out that the formulation of these duties would be unnecessary if the employer at the start had selected his personnel on the basis of tested productivity and high moral sense. It may not, however, be amiss to enumerate a few demands of an employer upon his employees:

(*a*) The employee must be loyal to the institution which he serves. He should not draw full pay and devote most of his time to some outside work. If the employee works on a full time basis and uses the facilities of the institution, it should have some rights over his patentable or some directly useful work.

In case the demands of some private institutions come within the scope of his special line he may be allowed to do consulting work and to devote part of his time to these institutions, with or without pay from his own institution, depending upon the nature of the consulting work, provided this work does not in any way impair his efficiency and productivity in his own institution.

(*b*) For purposes of team work, he should see to it that he gets along well, not only with his superiors, but also with his equals and his subordinates.

(*c*) His training and experience must be of such breadth as to warrant his usefulness to the institution.

(*d*) In the laboratory, his cleanliness, accuracy, and general technique must be of the highest order.

(*e*) Although he has to perform routine work in an institution, such as a university or a state bureau, this should not impair his love and capacity for investigational work.

At the present time, the public does not sufficiently appreciate the benefits that may be derived from scientific and technical investigation. As a consequence of this, sufficient material and moral encouragement are not given the investigators. This results in little and insignificant pro-

duction. The effect of such production is to further lessen the confidence of the impatient public in the value of scientific work. Let it then be the duty of both the employer and the employee to work harmoniously in the acquiring of results which will ultimately benefit the people.

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READ, REFLECT, ACT

A short article, "Why Men Leave Teaching," by a former Yale teacher appeared in the April number of *The Yale Alumni Weekly.*

This former professor, who is now in business, after giving his reasons for resigning—the old familiar tale of salary being too low to meet reasonable living expenses and reasonable provision for future of family—makes some deductions that are worth the thoughtful attention of those who "pass sentence" upon the salaries paid College teachers.

To the individual teacher personal responsibility to his family must be paramount. If the pressure becomes too great, he will leave the institution where he is working. And on the whole the institution, especially if it is large and well-organized like Yale, will be affected only in a small measure. The gap will be closed. The work will go on. The individual forgotten. In a larger sense the greatest loss to Yale does not come from the loss of the men who leave but more from the consequences of low salaries to the men who remain or who fail to come to her faculties.

And here is where lies the chief importance of the experience which is sketched above. My pitifully small salary was rapidly lowering my efficiency as a teacher and scholar. And now in the perspective of the years which have passed, I believe that it was an actual gain for the University to have me go. Let me be a little more specific: The continual nightmare which came from inadequate insurance, cramped living quarters, the lack of a larger social life, the lost opportunities to travel either for purposes of study or of general culture-all of this and much more was making me less productive as a scholar and less effective as a teacher. Even worse than this was the fact that for the last three years that I was in New Haven, I spent my summers in outside work in order to gain an additional income which would balance my budget.

Now anyone who knows what makes for the healthy development of a teacher and scholar knows only too well that the vacation period which is cynically known by outsiders as a long period of loafing must be made the period of most intensive work. The growth of a teacher's ability to inspire students depends inevitably upon the growth of his mind in scholarly study and research. Research is not antagonistic to good teaching but absolutely essential to it. Without it the teacher becomes a routine drill master of a value which constantly diminishes with the years. Any system which makes it necessary for teachers to spend their summers in prostituting their intellects by teaching in summer schools, or to spend their time in any other way than in that which directly promotes a constant deepening and enrichment of the mind is, in my opinion, a shortsighted policy. The greatest efficiency of the individual is made possible.

Conditions at Yale have been improved somewhat since I left but they have been affected to such a limited degree that the basic condition which drove me from its walls still obtains. Few appreciate what is owed to the loyal men who, instead of leaving as I did, have stayed at their posts.

I want to say with all sincerity that I have met in high places in business more lack of ability and more inefficiency than I ever found upon the Yale Campus among those who make up the staff of her teachers. In fact, I know of no single body of men anywhere who have greater ability and who do their work quite so well. It is high time that they receive more generous treatment at the hands of the University, which alone can be made possible by increased endowment.

PROGRESS OF TOBACCO CO-OPERATIVE MARKETING IN CAGAYAN[1]

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In 1925 when I made the first study of the Tuguegarao Tobacco Growers' Association Inc., there were only thirteen barrios covered by the association. These barrios are all in the municipality of Tuguegarao. I visited the Cagayan Valley again from May 26 to June 14, 1927, and found that the association has grown tremendously in the past two years. The association now has branches in the towns of Solana and Peñablanca, Cagayan. The membership has increased from 500 in 1925 to 2,029 at the close of the year 1926. The main association in Tuguegarao has increased its membership from 500 to 1,379. The branches of the association in Solana and Peñablanca have memberships of 592 and 58, respectively. This gives the total membership of 2,029.

Judging by indications, the membership will increase this year. The technical adviser of the association told me that a branch in Piat, Cagayan, will be ready to transact business during the current year.

The branches in Solana and Peñablanca are controlled by the central office of the association in Annafunan, Tuguegarao. They are managed by committees in the same way as the barrio organizations are handled (Mabbun, 1927).[2]

VOLUME OF BUSINESS OF THE ASSOCIATION IN 1926

Owing to the difficulties which the association met in 1926 in dealing with the buying companies which constantly try to suppress its activities, the sales of the tobacco by the members did not take place until November. The general sales of tobacco in the province commenced in August, but the association could not attend to marketing of its product at once. It had to first adjust differences which had arisen between it and the agents of the Compañía Tabacalera. This company had contracted to buy the tobacco of the association but finally withdrew from the contract.

In spite of this trouble which temporarily paralyzed the business activities of the organization, the association sold its tobacco to other buyers in the province. Table 1 shows the volume of business the association

[1] Experiment Station Contribution No. 462. Received for publication June 29, 1927.

[2] Mabbun, Pablo N. 1927. Study of the Tobacco Growers' Association, Inc., of Tuguegarao, Cagayan. THE PHILIPPINE AGRICULTURIST, **16**: 19–33.

transacted during the year 1926. These data cover both the main association in Tuguegarao and its branches in Solana and Peñablanca.

TABLE 1

Showing the result of the sales of the tobacco of the members of the Tuguegarao Tobacco Growers' Association, Inc., and its branches for the year 1926

The Main Association in Tuguegarao

BARRIOS	NUMBER OF LOTS	NUMBER OF FAMILIES	TOTAL AMOUNT	TOTAL COST	COMMISSION RECEIVED
			palillos	*pesos*	*pesos*
Annafunan	231	639	189,939	16,051.04	2,081.35
Atulayan	11	22	4,561	288.29	45.00
Bagay	30	90	30,629	2,291.85	306.29
Buntun	12	36	15,600	1,093.29	155.20
Capatan	25	75	25,565	2,135.56	255.65
Cataggamman	48	144	94,982	7,721.24	391.07
Larion	6	18	8,613	748.42	86.13
Libag	45	100	55,166	4,799.03	551.66
Namabbalan	9	27	7,212	623.83	72.12
Pal-lua	42	126	31,896	2,362.51	322.21
Ugac	16	48	24,600	2,581.00	246.00
Miscellaneous	—	———	16,858	492.39	25.11
Total	475	1,379	498,721	41,188.45	4,537.79
		Solana Branch			
Andarayan	54	162	62,075	4,810.00	436.00
Bañgag	41	123	36,793	1,344.28	309.46
Bauan	21	42	26,281	916.16	200.00
Basi	3	10	5,947	312.89	56.00
Calamagui	22	60	22,350	2,889.90	223.50
Centro	15	45	14,028	899.13	113.40
Lanna	6	18	5,089	469.83	50.00
Miscellaneous	44	132	32,200	1,288.00	200.00
Total	206	592	204,763	12,930.19	1,588.36
		Peñablanca Branch			
Lagum	29	58	37,872	2,644.62	300.00
Total	29	58	37,872	2,644.62	300.00
Grand total, main association and branches	710	2,029	741,356	56,783.26	6,426.15

The table shows that the association sold a total of 741,356 *palillos* (6,309 quintals) of tobacco valued at ₱56,783.26. This amount was distributed as follows: The main association in Tuguegarao sold 498,721 *palillos* at ₱41,188.45; the Solana branch, 204,763 *palillos* at ₱12,930.19; and the Peñablanca branch, 37,872 *palillos* at ₱1,588.36. The association did not sell all the tobacco holdings of its members. It rejected unsound leaves; these represented from 20 to 25 per cent of the total holdings of

the entire membership of the organization. These rejected leaves had been eaten by weevils, or were moldy or dirty and torn. Such leaves, if sold, would injure the good name of the association.

It is the policy of the association to sell only sound leaves so as to earn a good name for the association and also to impress the members with the advantages of keeping tobacco of good quality for sale.

Out of the total sales by the association, which amounted to 741,356 *palillos* valued at ₱56,783.26, it received commissions amounting to ₱6,426.15. In 1925, the association received a total commission of ₱5,576.63. These commissions, amounting to ₱12,002.78, form a large sum from which to make loans to members and to pay for improvements for the association.

The commission is based not upon the value of the product sold but upon the quantity delivered, which accounts for the commission in 1925 being smaller than in 1926, although the value of tobacco sold, ₱64,302.15, was greater. The buyers generally give commissions ranging from 50 centavos to ₱1.00 per 100 *palillos* delivered to them.

Prices

The main association in Tuguegarao received prices ranging from ₱10 to ₱11 a quintal for the tobacco it sold and the branches in Solana and Peñablanca received from ₱9 to ₱9.50 a quintal. The difference in price was due to quality of tobacco. The Tuguegarao farmers had learned by experience in 1925 the advantages of having a better quality of tobacco, hence, tried to improve their product. The result was that the buyers gave higher prices for their product than they gave the members of the branches in Solana and Peñablanca.

These prices, however, are very much higher than prices received by non-members. Tobacco of the same quality as that sold by the association in 1926 was bought by organized companies from non-members at prices ranging from ₱6 to ₱9 a quintal. Individual tobacco buyers (unorganized) bought the same quality of tobacco at prices ranging from ₱8.50 to ₱10 a quintal.

In 1925, the association received better prices for its product. The prices the association received that year ranged from ₱10 to ₱15 a quintal. Non-members received from ₱9 to ₱10 a quintal for the same quality of tobacco. The difference in the prices obtained in the two years may be explained by the fact that in 1925 production was low and the demand was great while in 1926 production was heavy and there was a consequent decrease in the demand. Many of the buying companies reduced their purchases during 1926.

The low prices received by the association for its tobacco in 1926 accounts for the smaller income it received for the tobacco than in 1925, despite the greater quantity of tobacco marketed.

Sales

The tobacco of the association was sold collectively, as in 1925. The association divided the farmers (members) into districts and sold each district to the buyer offering the most advantageous terms. To prevent buyers buying only selected lots, individual sales were not permitted by the association. Despite this effort there were a few members in Solana who sold their tobacco individually because they could not wait for the collective sale by the association. The association permitted these individual sales so that the members might learn the disadvantages of making transactions in this manner; thus strengthening their faith in the organization. These members received very low prices, only from ₱5 to ₱7 a quintal, while members in the same locality received from ₱9 to ₱9.50 a quintal for the same quality of tobacco from collective sale by the association.

TABLE 2

Giving names of companies and persons to whom the association sold tobacco and the quantity and value of sales

NAME AND ADDRESS	QUANTITY	VALUE
	palillos	*pesos*
John Lohmann Co., Tuguegarao	481,160	37,364.10
Alhambra, Tuguegarao	64,805	7,080.89
Insular, Tuguegarao	60,445	3,731.29
F. Lim Tak Co., Tuguegarao	67,847	4,654.36
Severino Pagalilauan, Peñablanca	6,847	445.19
F. Lim Tek Co., Tuguegarao	31,069	2,219.43
Individual Chinese, Solana	29,183	1,288.00
Total	741,356	56,783.26

The association followed the same sales policy as in 1925, that is, controlling the product of its members so as to secure a price without reference to supply and demand. The association held the tobacco of its members refusing to sell until it was able to secure the most advantageous price. This price was higher than that offered for tobacco of the same quality belonging to non-members. It succeeded in doing this, but the price it received for the tobacco of its members, crop 1926, was very much lower than for tobacco of nearly the same quality in 1925. This difference was due to the influence of demand and supply. In 1925 there was great demand for tobacco as the production was low, but in 1926 the production was high and the demand was low, hence the low price. Many of the buying companies bought smaller quantities of tobacco in 1926 than in 1925.

Classification

The tobacco of the association was classified in accordance with instructions given to its members. The method of classification is the same as that given by Mabbun (1927).[3]

[3]Mabbun, Pablo N., *loc. cit.*

In an effort to improve the method of classification of its tobacco the association tried to introduce the old method used during the Tobacco Monopoly in the Spanish régime, that is, separating the leaves into bundles called "hands", each hand containing 100 leaves, of similar length and size. This method of classification would bring better prices than the method now used by the association, but it requires from the farmers much time and patience. The association succeeded in inducing 130 families to classify their tobacco in this manner. Their product amounted to 400 quintals. These members received higher prices than those who sold their product through the association in the loose form. The association expects that more members will follow the old method of classification next year and thereafter and hopes it will be finally adopted when the members realize the advantages of arranging their crop in this manner.

Delivery

Tobacco bought from the association was delivered by the members individually at the expense of the buyers. (That the members bore this expense as stated on p. 24 in Mabbun (1927) is an error.)

Storing

The Tuguegarao association has no warehouse. The members still keep their product in their own houses as they did in 1925. The association, however, is planning to build a warehouse 18 by 17 meters of mixed material in Annafunan, Tuguegarao. The material for the construction of this warehouse has been bought and the technical adviser of the association told me that they will try to have this building finished and ready for use before the end of the current year.

One warehouse for the whole association having a total membership of 2,029 will be indequate, but it will be a good beginning. As soon as this one is built and used by the farmers it will be easy to induce them to build more.

I had occasion to talk with the provincial governor, Mr. Proceso Sebastian, regarding warehousing facilities for the tobacco farmers. He told me that he favored the idea of urging the government to build warehouses for the tobacco farmers, as it would help to improve the quality of their product. This need of warehousing facilities by the association was discussed in my former paper (Mabbun, 1927).

OTHER ACTIVITIES OF THE ASSOCIATION

Loans

Most of the farmers who joined the association in the barrios of Capatan and Libag in 1925 were heavily indebted to Chinese tobacco buyers. The association urged these members to square their accounts after they received their shares of the proceeds of the sale of the tobacco of the association, crop 1926. This they did but were left penniless. They had to borrow money

to pay their living expenses. The association met this demand of its members by lending them money at 12 per cent per annum.

As a matter of policy, the association decided to limit the amount of loans to from ₱5 to ₱20 to each individual borrower. The money borrowed in most cases was for buying food supplies, medicine, and for paying matriculation fees for school children and buying their books. Occasionally, loans for weddings, baptismal celebrations, and patron saint fiestas were granted, but such loans were discouraged by the association by appealing to the sense of economy of the members and by persuasion.

The association has been granting loans for purely consumptive purposes during last year. This was unavoidable as the members in most cases had to have money and if the association had refused to grant loans the members would have borrowed from private persons at exorbitant rates of interest and given as security their crop. This kind of a debt would hamper the marketing business of the association. Besides, there is the danger of losing the trust of the members in the organization if they were refused loans.

Table 3 shows the extent of the loaning business of the association in 1926.

TABLE 3

BARRIOS	NUMBER OF MEMBERS GRANTED LOANS	AMOUNT OF LOANS
		pesos
Annafunan	64	568.75
Capatan	45	519.12
Libag	55	441.00
Cataggamman	15	206.00
Bagay	22	169.00
Namabbalan	9	76.00
Pal-lua	9	35.00
Atulayan	8	60.00
Buntun	3	15.00
Ugac	3	20.00
Total	233	2,109.87

This table shows that the association granted loans to 233 members, the total amounting to ₱2,109.87. All of these members belong to the main association in Tuguegarao. They represent 11.43 per cent of the entire membership of the organization, including its branches in Solana and Peñablanca. The association has not yet extended its loaning business to the branches in Solana and Peñablanca.

Taxes

Many of the members of the association, including the branches, were not able to pay their taxes in 1926 because of lack of money owing to the low prices of tobacco and the delay of the sales of that held by the association. The association tried to help the members out of this difficulty by paying the taxes of several. These advances the association considered as loans and payable from the proceeds of the sales of the members' crops for the current year.

Table 4 shows the result of the activity of the association in this direction.

TABLE 4

BRANCHES	BARRIO	NUMBER OF MEMBERS HELPED	AMOUNT OF TAXES IN PESOS
Tuguegarao:			
"	Annafunan	78	573.99
"	Capatan	19	110.89
"	Cataggamman	62	388.31
"	Libag	50	280.62
"	Namabbalan	10	50.00
"	Pal-lua	12	75.41
Solana branch:			
"	Andarayan	48	320.00
"	Bañgag	37	295.00
"	Bauan	17	224.00
"	Centro	10	136.00
"	Basi	3	25.00
Peñablanca branch:			
"	Lagum	15	300.00
Total		361	2,779.22

This table shows that the association paid taxes for 361 members, or 17.79 per cent, amounting to ₱2,779.22. This activity of the association helped very much to strengthen the confidence of the members in the organization.

Co-operative stores

In 1925 when I made the first study of the co-operative marketing association in Tuguegarao there was established and in operation one co-operative store in the barrio of Annafunan, the place where the central office of the organization is located. This store sells goods to the members of the association and to the general public.

The number of co-operative stores managed by the organization has increased to three with the growth of the membership; two are in Tuguegarao and one in Solana.

These stores serve as a medium to control the members of the co-operative marketing association. They also serve the community by bringing to them stores where they can buy articles for every day needs. These stores, too, serve to awaken the people to the wide opportunities for business

undertakings through co-operative effort. The association hopes to establish more of these co-operative stores from time to time.

The association further helped its members by supplying them with corn and rice during the months of March, April, May, and June last year when there was scarcity of these grains in the locality. The association imported rice and corn valued at ₱600 and distributed these at cost to the members in great need of them, and even sold these cereals on credit to those who could not pay cash.

OBSERVATIONS

As conclusions from these two studies would be premature, I shall make no attempt to make any based on my knowledge of the two years' activities of the organization. I am, however, giving herewith some observations which I made when I conducted these studies.

1. I observed that the tobacco planters of Cagayan are beginning to appreciate the advantages of co-operation. The majority of those to whom I talked expressed approval.

2. The people in other parts of the province are beginning to look with favor upon the co-operative movement in marketing tobacco. Former opposers of the movement are now supporting the organization. *La Verdad*, a weekly which was the organ of the enemies of the co-operative movement, is now publishing editorials favoring co-operative marketing of tobacco and the methods of classification of the product used by the Tuguegarao Tobacco Growers' Association Inc. Ex-Governor Lasam of the province, the foremost leader of the opposition to the co-operative idea of marketing tobacco, now supports the association. He is the editor of *La Verdad*.

3. One weakness of the association is the employment of a man as president who has had no training and experience in the tobacco business. A man who is well-versed in the tobacco business should be employed by the association if it is to do good business. One reason this president was elected by the association may be that he is a lawyer and can look after any legal business of the organization. This may be an advantage but not from a business point of view.

4. Much has been done by the association in teaching the tobacco farmers how to improve the quality of their product. More could be accomplished in this direction if the association would adopt rules and enforce them requiring the members to produce the same or nearly the same quality of tobacco. Rules, such as those adopted by successful co-operative marketing associations like the California Fruit Growers' Exchange, concerning the production of similar grades of product could be adopted, with modification to suit conditions, by the Tobacco Growers' Association Inc. of Tuguegarao.

5. Also curing houses and warehouses for the use of the association would help to improve the quality of tobacco produced by the members.

6. The organized companies in the province buying tobacco are constantly trying to defeat the purposes for which the co-operative marketing association was established. They use all kinds of tricks to destroy

the faith of the members in the organization. The leaders of the co-operative marketing associations should try to win the sympathy and friendship of these well-organized tobacco buyers.

7. The association should endeavor to have its members adopt the classification of the leaves into "hands," as this method of classification is demanded by the best tobacco buyers in the province, such as Weber and Co., and others. Mr. Weber claims that tobacco classified in this manner is cleaner and will not get moldy as easily as tobacco classified in loose form.

8. Lastly, I observed that the co-operative marketing association in Cagayan is growing very fast; it will not be long before a network of co-operative marketing associations among tobacco farmers will cover the province.

THE ILAGAN TOBACCO GROWERS' ASSOCIATION, INC.

I went to Ilagan, Isabela, twice with the object of getting data about the business transactions of this association, but I was not able to meet Mr. Peña, the agent of the Bureau of Commerce and Industry directly in charge of this association. He was on a business trip to Reina Mercedes, Isabela, on both occasions. The report that I herewith submit on the Ilagan Tobacco Growers' Association Inc. consists of what information I could get from some members of the organization, from the personnel of the Tobacco Experiment Station in Ilagan, and from Mr. Marcelo Adduru, the agent of the Bureau of Commerce and Industry in Cagayan and the organizer of both the Tuguegarao and Ilagan associations.

Organization and management

The Ilagan Tobacco Growers' Association Inc. was organized in 1924 and incorporated during that same year. The organization and management of this association is similar to that of the Tuguegarao Tobacco Growers' Association Inc.

Growth of the association

In 1925, the association had 201 members. In 1926 this number had increased to 322. As Ilagan is nearly as large as Tuguegarao it seems as though the growth of the association is very slow. One reason for this may be that the influence of the Tabacalera Company among the tobacco farmers in that locality is very great. This company employs many of the tobacco farmers as tenants on its *hacienda* in the barrio of San Antonio, Ilagan. Besides, the office of the Chief Agent of the company for the whole Cagayan Valley is located at Ilagan. This company has always been antagonistic to the business activities of the co-operative marketing associations in the valley.

Sales

Individual sales of tobacco by the members is permitted by the association. This explains why only 232 quintals of tobacco of members were sold through the association in 1926. It would have been able to sell more than 1,000 quintals had all the members sold their product collectively through the organization.

Prices

The prices received by the members of the Ilagan association in 1926 ranged from ₱14 to ₱15 a quintal. Non-members received from ₱8 to ₱12 a quintal for the same quality of tobacco as that sold by the association.

The association received a commission of about ₱700 for the sale of the 1926 tobacco crop of its members. In 1925 it received about ₱1,000 as commission. The fact that in 1925 the prices for tobacco were higher than in 1926 and the association marketed the tobacco of the majority of its members collectively, while in 1926 only 232 quintals of members' tobacco were marketed through the association, explains the difference in the amounts of commissions in the two years.

Delivery

Delivery of association tobacco to buyers was done individually by the members as the association has no warehouse where the tobacco can be stored in common. This method of delivery is the same as that described for the Tuguegarao association (Mabbun, 1927).

OBSERVATIONS

1. The discipline of the members of the Ilagan association is lax. It should be strengthened. Many of the members market their tobacco individually because they cannot wait for the sale of their product collectively by the association.

2. On account of the presence of the Tobacco Experiment Station in Ilagan where the tobacco farmers observe the methods used in improving quality of the product, the association has done little for its members in this direction. The farmers themselves improve their methods through observation on the Experiment Station. This is one advantage the Isabela tobacco farmers have over the Cagayan tobacco farmers.

3. On account of the *hacienda* of the Tabacalera Company which employs many farmers as tenants, being in the locality, the growth of the association has been very slow. Most of these tenants do not join the association because their landlord is against the co-operative movement.

4. There is an effort to extend the co-operative marketing in the province by the agents of the Bureau of Commerce and Industry who are working there. They plan to establish associations in the towns of San Pablo, Santa María, Naguilian, and Echague, Isabela, next year. One of these agents has started a campaign in San Pablo and it is reported that the association in that town will be ready to do business before the end of the current year.

ACKNOWLEDGMENT

I am indebted to Mr. Marcelo Adduru, to the personnel of the Tobacco Experiment Station in Ilagan, Isabela, and to the members of the co-operative marketing associations for the information they kindly gave me.

A STUDY OF THE HISTORY, FEEDING, AND MANAGEMENT OF RACE HORSES RUN UNDER THE AUSPICES OF THE MANILA JOCKEY CLUB[1, 2]

VALENTIN K. LINA

The value of a light horse depends primarily on its speed and endurance. Race horses, therefore, may be considered as playing an important rôle in constructive breeding operations because their performance is necessarily a criterion of their worth, and an indication of the ability of their sires to produce poor or good offspring. Thus, a study of their history and management is interesting, and appropriate, and should be of value.

This investigation was conducted in Manila, covering a period of one year and eight months, from June, 1925, to February, 1927. The specific objects were as follows: (*a*) To determine the origin, color, height, and performance of first purse winners among the horses run under the auspices of the Manila Jockey Club; (*b*) to ascertain the kinds and amount of feeds given to race horses; (*c*) to secure data on the details of management of race horses.

MATERIALS

The records of 324 horses winning first purse were studied; two were from China, four from Arabia, four from Australia, and the remainder from different provinces in the Philippines. Out of this number only four were females.

In studying the history of these horses the record books of the Manila Jockey Club and the Batangas breeding station were examined. Eighteen stables were examined to secure data on the management of race horses. A spring balance was used in determining the consumption of feeds by the animals.

[1]Thesis presented for graduation, 1927, with the degree of Bachelor of Agriculture from the College of Agriculture No. 256; Experiment Station contribution No. 463. Prepared in the Department of Animal Husbandry under the direction of Dr. Valente Villegas.

[2]The writer is indebted to the officials of the Manila Jockey Club for permission to use the record books of this organization; to Messrs. A. B. Marthenis, A. Lozada, F. Rodriguez, E. Trinidad, L. Tiemchong, J. Mortera, F. M. Jhocson, Q. de Vera, M. P. Marcaida, A. Valero, J. Robles, J. Zulueta, J. Alba, P. Magallanes, R. Montañes, E. Sagarbarria, A. Ansaldo, A. Nieto, and E. Marcelo, stable owners and managers, for allowing the writer to carry out observations on their horses and stables; and to Mr. Benito Vergara, an experienced jockey, for information connected with the different phases of this study.

PROCEDURE

In the study of the history of the race horses, the following points were considered: name of animals, owner, color, height, origin, and performance. Whenever possible, the ancestry of the animals was also obtained from any record available.

To obtain information on the management of the horses, observations were made on the feeding and handling of all horses in the different stables investigated. These were made with each stable for five consecutive days. In the meantime, questions were asked the managers, or owners of the stables, and the grooms and jockeys regarding other phases of management.

DISCUSSION OF RESULTS

Origin

From the beginning of the operations of the Manila Jockey Club the winning horses came from Batangas, Camarines provinces, Cebu, Cavite, Negros Island, Misamis, Pampanga, Bulacan, Manila, Davao, Mindanao, Pangasinan, Nueva Ecija, Cagayan, Albay, Leyte, Bataan, Jolo, Laguna, Rizal, Ilocos provinces, Abra, Zambales, Zamboanga, Tayabas, and Romblon. The winning horses from foreign countries came from Arabia, China, and Australia.

Of the provinces in the Philippines, Batangas leads in producing the greatest number of winners, or a total of 136 horses. The Camarines provinces rank second, with a total of 37 horses. Then follows Cebu, having 30 horses to its credit. Cavite has 13 horses and Negros Island and Misamis have 11 each, while Bulacan and Pampanga each have 10 winners. The other provinces have less than 10 animals each. Among the foreign countries, Arabia and Australia have four horses each and China has two.

Color

The most common color among the horses was bay. Other colors of great frequency among the native horses were gray, buckskin, and roan. The other colors represented by Philippine horses were chestnut, cream, black, piebald and skewbald, and mouse color. There were three horses of unknown color. Of the foreign horses, besides bay, the colors registered were chestnut, roan, and piebald or skewbald.

Height

Looking into the frequency distribution of height in table 2, it may be seen that among the native horses, the most common height was 51 inches, this being followed by 50 inches. Most of the horses measuring 48 inches were those that ran in the early days of the Manila Jockey Club. The tallest horse measured 55 inches. The average height was 50.9 inches.

Among the foreign horses, the most frequent height recorded was 57 inches. The tallest animal registered measured 60 inches; it was from Australia. The lowest was 52 inches, the height of two horses from China. The average height was 55 inches.

The Manila Jockey Club

In presenting the performance of winners in the Manila Jockey Club, it is necessary that a general statement of the functions of the club and history of the races held under its auspices be given as a background for correct interpretation of the performance of each animal.

The Manila Jockey Club had its track in Santa Mesa from 1887 to 1900. In 1901 there were no races. In 1902 the track was transferred to San Lazaro, where racing has been held from that year to the present.

The functions of the Manila Jockey Club are:

(*a*) To maintain the race course in good order.

(*b*) To supervise the classification and running of horses in the track.

(*c*) To provide judges for the races.

(*d*) To provide for purse money for winners in the races.

(*e*) To exercise vigilance that dishonest jockeys use no tricks while racing, and, when found guilty, to punish them.

(*f*) To sell race tickets and pay dividends to winning holders of same.

(*g*) To keep records of horses admitted to the races.

(*h*) To distribute and sell programs to the public.

(*i*) To promote in the best way possible means that tend to improve racing.

Classification of races

In 1889 the races were classified as follows:

a. Carrera de Velocidad
b. " " Luzon
c. " " Lipa
d. " " Pampanga
e. " " Batangas
f. " " Albay
g. " " Camarines
h. " " Marquez
i. " " Combate
j. " " Compensación
k. " " Consolación
m. " " Filipinas

The names given above were simply designations, in many cases, in honor of certain provinces. No specific requirements were attached to each.

At present the kinds of races are:

a. Carerra de novatos
b. " " vencedores de novatos
c. " " perdigones de novatos
d. " " 5a serie
e. " " perdigones de 5a serie
f. " " 4a serie
g. " " 3a serie
h. " " 2a serie
i. " " 1a serie

The *a*, *b*, and *c* races are subdivided into two groups, one group for the native horses and the other for the grades (mestizos). Races of the *c* group are always provided, but seldom run, because no horses are entered for the group.

a. Carrera de novatos (novices). This race includes all newly entered horses. The animals carry no extra weight outside that of the saddle and jockey.

b. Carrera de vencedores de novatos (winners in the novices). All horses winning first place in *a* are promoted to this class. Upon entering this race a total weight of 110 pounds, including the weight of the saddle and jockey, is placed on the animal. With a horse winning first place an extra weight of four pounds is added to the load in the next race until and including the third winning, when the total weight carried is 122 pounds. After three first place winnings native horses are raised to the "Carrera de 5a serie" while the grades are promoted to the "Carrera de 1a serie". Two second place winnings are reckoned as equivalent to one first place. Horses getting second place in the races are weighted two additional pounds at each winning, until 122 pounds is reached. A horse in this class carries one pound of weight less each time it loses a race, until the minimum load of 110 pounds is again reached.

c. Carrera de perdigones de novatos (losers in the novices). Horses losing in the "Carrera de novatos" are demoted to this class and carry no load other than the jockey and saddle.

d. Carrera de 5a serie. As given above, native horses winning first place in the "Carrera de vencedores de novatos" three times are raised to this class. Also, losers in the "Carrera de 4a serie" within six months of consecutive racing are demoted to this class, whether the animal be a native or grade. The initial weight carried by horses promoted from "Carrera de vencedores de novatos" is 110 pounds, while those demoted from the "Carrera de 4a serie" start with a load of 120 pounds. A horse starting with a weight of 110 pounds that wins first place is made to carry 114 pounds the first time it wins a race; 118, the second; 121, the third; 123, the fourth; and 125, the fifth race. The horse is then raised to the "Carrera de 4a

serie." Upon losing, the load of horses in "5a serie" is lightened at the rate of one pound each time until the minimum load of 110 pounds is reached. Horses in "5a serie" demoted from "4a serie" are raised again to the "Carrera de 4a serie" upon getting one first place or two second places in the first mentioned classification. But if they lose, a decrease of two pounds on their load is made each time until 110 pounds is reached. Such demoted horses as carry a load of 110 pounds or higher, but below 120 pounds, on winning first place in a race, are made to carry 120 pounds the next race.

e. Carrera de perdigones de 5a serie. In the same way as in the "Carrera de 4a serie", horses losing in the "Carrera de 5a serie" within six months of consecutive racing are lowered to this class. The initial weight carried then is 120 pounds, a reduction of two pounds on their load being made each time they lose until a minimum weight of 110 pounds is reached. The weight is raised to 120 pounds any time that an animal carrying less than this load wins first place in the race.

f. g. h. and i. Carreras de 4a, 3a, 2a, and 1a serie. Promotion of horses from "Carrera de 4a serie" to the Carrera de 3a serie" and so on with each class to the "Carrera de 1a serie" follows, as to the number of winnings required as well as to weight regulations, the manner of raising horses from the "Carrera de 5a serie" to the "Carrera de 4a serie". Likewise, the same rules are followed in lowering the class of a horse from one "serie" to another, as in the case of horses demoted from the "Carrera de 5a serie" to "Carrera de perdigones de 5a serie". The increase or decrease on the load of winners and losers is the same as in the "Carrera de 5a serie". In the "Carrera de 1a serie", however, the amount of weight that horses are made to carry is increased by two pounds each time they win, there being no limit as to the weight they may carry. Hence, many animals in this class contract tendonitis, sesamoiditis, carpitis, ringbone, navicular disease, or splints as a result of carrying excessive weight. The maximum weight carried by a horse in the Manila Jockey Club was 171 pounds by Asia, a grade Arabian, in 1923.

Very few native horses can classify in the "Carreras de 3a, 2a, and 1a serie", but the few that are able to run in these classes are among the best performers on the race track.

As novice races for grades are not always provided, grades accepted for racing are usually entered in the "Carrera de 1a serie" and are started with a load of 150 pounds. Therefore, the best of the natives compete with the grades in this class, while poorer grades that are demoted to the "Carrera de 2a, 3a, 4a, 5a, and perdigones de 5a serie" also compete with the natives in those classes. Grades are classed in the "series" named last by demotion only.

The determining factor distinguishing the native horses from the grades is generally their height. That is, all horses measuring 53 inches or lower are classified as natives, and those of higher measurements as grades.

However, if the officials of the Manila Jockey Club judge that a horse, by its appearance or pedigree, is a grade it is classified as such, notwithstanding that its classification by height is to the contrary. Also, before a horse can be admitted into any class the animal must be at least three and a half years of age as indicated by the appearance of the first two pairs of permanent incisors.

It was, however, found in the course of this study that horse owners may force the admission of grades as natives in a number of ways. In case the controversy hinges on slight differences and doubtful opinions, an animal rejected as grade may still be admitted as native if sponsored by an influential person. If an animal is over 53 inches in height, shrewd dishonest horsemen resort to administering opium to the animal which makes it roach its back and thus measure lower on its withers than it naturally would. Likewise, it is a frequent practice to pare the soles of the front hoofs unduly, so that the height of the horse may be reduced.

During the early days of racing, as in the "Carrera de velocidad", "Carrera de Luzon", etc., the owners rode their own horses. But at present the jockeys are generally hired men who are paid twenty per cent of the cash winnings.

Distances of races

The distances run range from 1/2 to 2 miles, the graduations between these being 9/16, 5/8, 3/4, 13/16, 7/8, 1, 1–1/8, 1–1/4, and 1–1/2. These distances apply to all classes of racing. There are animals that are better for long distances than for short, and vice versa.

Purses

A sample of the purses offered to winners in the different classes of races is given below. The purses vary somewhat in amount from time to time. As a rule, the larger purses are offered in the novice classes in order to encourage the acquisition of new horses, and in the "1a serie" because the best horses run in this class. Conversely, the lowest purses are offered to the loser classes.

	1st place	*2nd place*	*3rd place*
Carrera de novatos nativos	₱300.00	₱90.00	₱30.00
Carrera de novatos mestizos	330.00	90.00	30.00
Carrera de perdigones nativos	180.00	90.00	30.00
Carrera de perdigones mestizos	210.00	90.00	30.00
Carrera de vencedores de novatos nativos	200.00	85.00	30.00
Carrera de vencedores novatos mestizos	210.00	90.00	30.00
Carrera de perdigones de 5a serie	180.00	60.00	30.00
Carrera de 5a serie	230.00	60.00	30.00
Carrera de 4a serie	250.00	60.00	30.00
Carrera de 3a serie	265.00	70.00	30.00
Carrera de 2a serie	265.00	70.00	30.00
Carrera de 1a serie	300.00	90.00	30.00

Formerly loving cups were offered instead of purses. Some of the cups were: La Copa de Uli Uli, de Filipinas, Disputado, del Ejercito, de Madrid, de Forasteros, del Derby, de Santa Ana, etc.

Winners

The different provinces and countries contributing to the supply of first purse winning horses in the Manila Jockey Club have been discussed under "origin".

Table 1 shows some of the picked performers. It may be seen that many of these animals came from the province of Batangas, particularly from the municipality of Lipa. With horses whose pedigree is definitely known, Bedr. Jr., a half-breed Arabian, and Zakarrah, a pure-breed Arabian, apparently gave more select performers than other sires.

Horses classified as natives that have run in the "Carrera de 1a serie" and have made good records are:

Name of horses	Performance		
	Load	Distance	Time
	lbs.	*miles*	*min.*
Orlando	155	1-1/4	2:44-4/5
Borrasca	118	1	2:11-2/5
Adelante	113	3/4	1:36
Electrico	110	3/4	1:36
Minino	110	3/4	1:36
Punay	110	1/2	:59
Punay	124	9/16	1:10
Minerva	110	1/2	:59
Rik	118	9/16	1:05
Rik	118	1-1/8	2:27
Leyte	123	5/8	1:17
Recta	138	9/16	1:11
Oriental	114	1	2:06
Rush	140	9/16	1:05
Rush	126	1	2:05
Sagunto	130	9/16	1:05
Sagunto	123	1	2:05
Sagunto	118	1-1/4	2:40
Bleriot	135	1/2	:58
Bleriot	148	9/16	1:07
Antibarry	126	9/16	1:06
Antibarry	113	1-1/8	2:17
Apollo	123	1/2	:58
Apollo	117	1	2:05
Precioso	114	7/8	1:53
Precioso	118	13/16	1:40
Buquil	115	9/16	1:09
Tecumseh	125	5/8	1:16
Tecumseh	120	1-1/8	2:25
Handsome	130	1	2:05
Handsome	120	1	2:04

Feeding and management

Eighteen stables in which a total number of 143 horses were kept were investigated in this study in connection with the feeding and management of race horses. The number of animals in each ranged from 4 to 19, giving an average of 8 horses (see table 3).

Feeding

In all stables, except stable No. 3, horses were fed twice a day, morning and afternoon. The common feeding time in the morning was between eight and nine o'clock and in the afternoon between four and five o'clock. In stable No. 3, the horses were fed three times a day, morning, afternoon, and night. The morning and afternoon feeding times were the same as in other stables but at night the last part of the ration was supplied to the animals at about eight o'clock. In this stable the ration was distributed as follows: one-half in the morning, one-fourth in the afternoon, and one-fourth at night.

Concentrates

As may be seen in table 4, different mixtures of grains were used in feeding the horses. It will be noted that all the combinations include a portion of Australian fodder which is a roughage (mostly oat hay), the amount of this ranging from four-twenty-fifths to eight-seventeenths of the mixture by volume. The mixture used differed in all the stables, except in stables Nos. 2 and 6 in which the same combination was fed to the animals. Six mixtures were found to differ both in quantity and quality of constituents composing them. The most common combination consisted of rough rice, oats, corn, and Australian fodder in varying proportions. Besides these, Indian oats, rice bran, *garbanzos*, or chick pea (*Cicer arietinum*) were introduced in some mixtures.

The amount of concentrates given to horses in the morning varied from an average of 1.00 to 3.4 kilograms, with a general average of 1.6 kilograms. In the afternoon the amount varied from an average of 1.4 to 4.9 kilograms, with a general average of 2.6 kilograms. The total concentrates given during the day amounted to an average of from 2.8 to 7.6 kilograms and a general average of 5.2 kilograms.

Roughage

Besides Australian fodder which the animals got in the concentrate mixtures, they were also supplied green grass, using only barit (*Leersia hexandra* Siv.) for this. The green grass was given to the animals after feeding them with concentrates. The amount of this varied from an average of 0.14 to 1.64 kilograms, with a general average of 0.47 kilograms in the morning, and from an average of 0.24 to 2.0 kilograms, with a general average of .85 kilogram in the afternoon. The total amount supplied during the

day ranged from an average of 0.38 to 3.3 kilograms, with a general average of 1.41 kilograms.

The writer observed that in point of condition for racing, stable No. 8 had the best animals. That is, the horses were medium in flesh, giving the appearance of being energetic and active, free from flabbiness or sluggishness, and of sufficient form to carry the animal through strenuous effort.

It will be observed that more green grass was given to horses in stable No. 16 than in any other stable, amounting to an average of 3.3 kilograms a day. The manager of this stable claims that by supplying his animals with a more liberal amount of succulence, digestive troubles were less likely to occur.

Watering

The system of watering horses was uniform in all the stables. The animals were watered at the same time that the concentrates were supplied to them. Molasses was invariably used, enough of it being stirred in water to sweeten it. Rice bran was added to form a milky solution. The buckets containing the mixture were placed beside the feed boxes and left there till the next feeding. In this way, the animals were encouraged to drink at any time they chose. In fact, the horses drank more water than they would ordinarily do because of the molasses and rice bran in it.

Stable No. 12 added some muriatic acid (hydrochloric acid) and calcium phosphate to the drinking water each watering time at certain periods. The avowed object of the calcium phosphate was to prevent the onset of osteoporosis; and of the muriatic acid to aid digestion. The same stable sometimes gave, as a tonic, "Alquitran de Guyot", a tar preparation, to the horses. Another specific used was "Elixir de hierro, quinina y estricnina" which was given every 15 days as a tonic in stables Nos. 1 and 16.

The horses were not given salt in any stable investigated.

Cleaning

The race horses received a general brushing before saddling preparatory to training. After training they were cleaned with the currycomb and brush. The most thorough grooming took place in the afternoon before the animals went to rest.

Each time that a horse was groomed the feet were gone over. The dirt was removed and some kind of oil was applied on the hoof once a day.

Clipping and trimming

The mane, fetlock and long hair behind the cannon bones and sometimes the foretop were always kept closely clipped, while the length of the tail was kept even with the hock or higher. The hair of the coronet was also kept short. For the tail and coronet a pair of scissors was used, and the hand clipper for general clipping.

Shoeing

A special type of shoe was used and shoeing was generally done once a month. The usual rate for shoeing was ₱4 for four feet, including the cost of shoes.

Exercising and training

Every horse is generally ridden out on the track in the morning for exercise and training, the length of time depending on the individual requirements of the animal. The usual gait the horse is made to go is the canter but when the races are nearing they are tried on short distances on the gallop, at greater speed. But they are seldom made to run at the rate they are expected to make in actual racing as rival owners are always on the lookout, timing animals in the try outs.

Green horses from the provinces are not subjected to strenuous training until after they have been hardened sufficiently to be able to withstand hard work. At first the training is light, gradually being made harder and harder.

Housing

The horses are generally housed under specially constructed sheds, but in two of the stables investigated the boxstalls were on the ground floor of the manager's residence. In all cases, the grooms' quarters were located in some corner of the stable.

All the animals were kept in boxstalls, each being 2.5×2.5 meters in floor space, excepting in stable No. 18 in which, besides boxstalls of the size just mentioned, there were smaller ones, 2.0×2.5 meters. The construction material in every case was wood. Each boxstall was equipped with grain boxes which served for roughage also. To facilitate feeding and watering, windows were constructed in front of the grain boxes. Ventilation was afforded by large openings between the boards on the upper part of the walls of boxstalls. The floor was of dirt except in stable No. 12 which was of boards. In all cases, a thick layer of sawdust was placed inside for bedding.

Grooms

According to table 5, the average number of grooms in the different establishments studied was two men. Six stables had one man each while two stables had four men each. The cash wages of the grooms varied from ₱12 to ₱40 monthly, the average being ₱30.03. The grooms of stable No. 12 received ₱12 a month, with a special food allowance. Those of stable No. 15 received ₱20 a month with food.

Boarder's rate

Out of 19 stables observed, only six establishments admitted horse boarders for feeding and management (see table 5). The rate charged ranged from ₱35 to ₱45 a month, making the average ₱40.

SUMMARY

1. The records of 324 horses, all having won first purses were studied. Two of these horses were from China, four from Arabia, and four from Australia. Of the 324, four were females.

2. Batangas, Camarines provinces, Cebu, Cavite, Negros provinces, Misamis, Pampanga, and Bulacan lead in supplying the Manila Jockey Club with race horses. Batangas registers about four times the number originating from the Camarines provinces, which rank second.

3. Among the native horses, the common colors were bay, gray, buckskin, and roan; bay horses being most numerous. With the imported horses bay is the most common color.

4. The average height of native horses was 50.9 inches and of the foreign horses, 55 inches.

5. The basis for distinguishing native horses from grades was mainly the height of an animal. Horses measuring 53 inches or below were admitted as natives while those of higher measurements were classified as grades.

6. The functions of the Manila Jockey Club are given.

7. A classification of present day races and the regulations governing them are given.

8. The distances run by horses include 1/2, 9/16, 5/8, 3/4, 13/16, 7/8, 1, 1–1/8, 1–1/4, 1–1/2, 2 miles.

9. The performances of select winners are given.

10. In the early days cups were given instead of purses to winners. Today, purses are awarded.

11. Bedr Jr., a half-breed Arabian, and Zakarrah, a pure-breed Arabian, were notable as producing more famous race horses than other sires listed.

12. Eighteen stables and 143 horses were investigated in connection with the feeding and management of race horses.

13. Race horses are fed generally twice a day.

14. Different concentrate mixtures used are given, the most common ingredients in each mixture being: oats, rough rice, Australian fodder, and corn.

15. The average grain consumption daily is 4.2 kilograms.

16. Besides Australian fodder mixed in the grain mixtures, green *barit* grass is given. The daily average consumption of green grass is 1.3 kilograms.

17 Watering is done generally twice a day. Molasses and rice bran are usually added to the water to encourage the animals to drink more and to promote their health and condition.

18. Grooming is done twice a day and more thoroughly than in the case of carromata horses.

19. The mane and sometimes the foretop were observed to be closely trimmed. The tail was found to be usually cut to about the level of the hocks.

20. Race horses are regularly shod with specially made shoes.

21. Race horses are exercised and trained the morning daily.

22. All horses were kept in boxstalls constructed with dirt floor. Sawdust was used in all cases as bedding.

23. The average number of grooms in each stable was two. The average wage of grooms was ₱30.03.

24. The average rate for the feeding, care, exercising, and training of a horse boarder was ₱40.

RECOMMENDATIONS

From the foregoing study, the following recommendations are presented:

1. Realizing the difficulty of basing a just classification of race horses seeking admission to the race track into natives and grades, on appearances alone, it is recommended that the determining factor be height alone.

2. That the height regulation for native horses be raised whenever the number of such animals available warrant such action. This regulation will react favorably towards the breeding of larger horses.

3. The Manila Jockey Club, being the main beneficiary of improved horse breeding operations, should set aside a certain sum from its earnings to promote the breeding of better horses.

4. One way in which the Manila Jockey Club may help produce superior horses is by acquiring retired race horses with good records and individuality and transferring them to government entities or other reliable enterprises engaged in horse breeding activities for use as stud horses.

5. The practice followed by one horseman in supplying more succulence or green grass to race horses to avoid digestive troubles is salutary. Very many race horses at present suffer from digestive disturbances as a result of too much concentrates in feeding.

6. Improvement in the construction of boxstalls should be directed towards providing for more ventilation and light, leading to more sanitary conditions. Horses are not as likely to develop vices in well constructed boxstalls.

TABLE 1

Showing some of the best performers run under the auspices of the Manila Jockey Club

NAME OF HORSE	YEAR	KIND OF RACE	PERFORMANCE		
			distance, mile	*load, lbs.*	*time*
Cambing	1877		1/2	—	1:00
Liautard	1880		3/4	—	1:41
Silver	1891		1–1/2	130	3:10
Bob	1898		7/8	140	1:54–1/2
Girafa	1899		3/4	150	1:41
Orlando	1902	1a serie	1–1/4	155	2:44–4/5
Gloria	1902	1a serie	1	129	2:16
Matulin	1902	1a serie	1	136	2:14
Borrasca	1905	1a serie	1	118	2:11–2/5
Adelante	1906	1a serie	3/4	113	1:36
Eléctrico	1907	1a serie	3/4	110	1:36
Mínino	1908	1a serie	3/4	110	1:36
Visayas	1910	1a serie	1/2	122	1:01–1/5
Punay	1916	5a serie	1/2	110	:59
Punay	1917	1a serie	9/16	124	1:10
Minerva	1917	3a serie	1/2	110	:59
Rik	1919	4a serie	9/16	118	1:05
Rik	1919	1a serie	1–1/8	118	2:27
Leyte	1919	1a serie	5/8	123	1:17
Recta	1920	1a serie	9/16	138	1:11
Oriental	1920	3a serie	1	114	2:06
Rush	1924	1a serie	9/16	140	1:05
Rush	1924	1a serie	1	126	2:05
Sagunto	1922	3a serie	9/16	130	1:05
Sagunto	1923	1a serie	1	123	2:05
Sagunto	1925	1a serie	1–1/4	118	2:40
Doctor	1923	3a serie	1	111	2:09
Bleriot	1923	1a serie	1/2	135	:58
Bleriot	1924	1a serie	9/16	148	1:07
Pacific	1923	4a serie	1–1/2	110	3:14
Asia	1923	1a serie	5/8	168	1:17
Asia	1923	1a serie	7/8	150	1:54
Asia	1923	1a serie	1/2	171	1:02
Kuta	1924	4a serie	7/8	118	1:54
The Piker	1924	1a serie	1/2	119	:57
Barato	1924	3a serie	5/8	112	1:17
Antibary	1924	1a serie	9/16	126	1:06
Antibary	1924	1a serie	1–1/8	113	2:17
Apollo	1924	3a serie	1/2	123	:58
Apollo	1924	3a serie	1	117	2:05
Judith	1925	5a serie	1	120	2:10
Judith	1925	2a serie	9/16	112	1:08
Precioso	1924	5a serie	7/8		
Precioso	1925	1a serie	13/16	118	1:40
Shucix	1925	4a serie	5/8	112	1:18
Buquil	1925	2a serie	9/16	115	1:09
Tecumseh	1925	1a serie	5/8	125	1:16
Tecumseh	1925	1a serie	1–1/8	120	2:25
Handsome	1925	1a serie	1	130	2:05
Handsome	1925	1a serie	1	120	2:04
Black Beauty	1926	1a serie	1/2	141	:58
Black Beauty	1926	1a serie	1	135	2:02
Otello	1926	4a serie	5/8	119	1:10
Otello	1926	3a serie	1/2	121	1:01

TABLE 2

Showing frequency distribution of height

HEIGHT	NUMBER OF HORSES			
	Philippines		Foreign countries	
inches	*number*	*per cent*	*number*	*per cent*
48	10	3.5	0	0
49	32	11.3	0	0
50	63	22.3	0	0
51	112	39.7	0	0
52	24	8.5	2	22.2
53	30	10.6	0	0
54	10	3.5	1	11.1
55	1	0.3	1	11.1
56	0	0	1	11.1
57	0	0	3	33.3
58	0	0	0	0
59	0	0	0	0
60	0	0	1	11.1
Unknown	(32)	——	(1)	——
Totals.....	282	99.7	9	99.9
Mean height		50.9 in.		55.5 in.

TABLE 3

Showing the number of horses, boarder's rate, and the number and wage of grooms in different stables

STABLE NO.	NUMBER OF HORSES	BOARDER'S RATE	GROOMS	
			Number	Wage
		pesos		*pesos*
1	8	——	2	60.00
2	8	45.00	2	80.00
3	11	——	4	160.00
4	6	——	1	40.00
5	6	——	1	25.00
6	7	——	2	60.00
7	6	——	2	60.00
8	4	45.00	1	35.00
9	7	35.00	1	30.00
10	9	——	3	90.00
11[a] / 11	19	40.00	4	135.00
12	6	——	3	36.00
13	13	40.00	2	60.00
14[a]	6	35.00	1	——
15	4	——	1	20.00
16	8	——	2	65.00
17	8	——	2	60.00
18	7	——	2	65.00
Total.....	143	240.00	36	1,081.00
average....	8	40.00	2	30.03

[a] The owner of this stable is the manager and at the same time the jockey and the groom.

TABLE 4

Showing concentrate mixtures and average feed consumption by each horse in different stables

STABLE NO.	CONCENTRATED MIXTURES	FEED CONSUMPTION					
		Concentrates			Roughage		
		a. m.	p. m.	Total	a. m.	p. m.	Total
		kgm.	*kgm.*	*kgm.*	*kgm.*	*kgm.*	*kgm.*
1	Palay 3 parts[a] Rice bran 1 " Oats 2¼ " Australian fodder 1¾ "	3.38	3.50	6.88	0.52	0.96	1.48
2	Oats 1 part Palay 1 " Australian fodder 1 "	1.40	2.68	4.08	0.50	0.72	1.22
3	Rice bran 1 part Oats 2 " Palay 2 " Australian fodder 2 " Corn 1 "	1.10	2.30	3.40	0.14	0.24	0.38
4	Oats 1½ parts Palay 1½ " Corn ½ " Australian fodder ¾ "	1.10	2.26	3.36	0.50	0.92	1.42
5	Palay 2 parts Australian fodder 1 "	1.40	2.94	4.34	0.42	0.92	1.34
6	Australian fodder 1 part Palay 1 " Oats 1 "	1.12	2.30	3.42	0.39	0.74	1.12
7	Oats 1 part Australian fodder 1 " Palay 1 " Corn 1 "	1.54	3.24	4.78	0.26	0.38	0.64
8	Oats 1¼ parts Chick pea 1½ " Australian fodder 1 " Palay 1½ " Indian oats 1¼ "	2.74	4.90	7.64	0.24	0.42	0.66
9	Oats 1 part Australian fodder 1 " Corn ½ " Rice bran ½ " Palay 1 "	1.82	1.88	3.70	0.22	0.34	0.56
10	Corn 29.3 kgm. Palay 43.0 " Australian fodder 41.0 "	1.86	2.30	4.16	0.44	0.48	0.94
11*a*	Palay 1 part Oats 1 " Australian fodder 1 " Corn 1 " Indian oats 1 "	0.96	2.24	3.20	0.38	0.56	0.94
11*b*	Palay 2 parts Oats 2 " Australian fodder 1½ " Corn 1 "	1.24	2.60	3.84	0.44	0.62	1.06
12	Palay 1 part Oats 1 " Australian fodder 1 " Corn ½ " Rice bran ½ "	1.40	1.40	2.80	0.40	0.40	0.80

13	Palay....1 part Oats....1 " Rice bran....1 " Australian fodder....1 " Corn....1 "	1.72	3.00	4.72	0.58	1.02	1.60
14	Palay....1 part Australian fodder....2 " Oats....1 " Rice bran.... ½ "	1.40	1.40	2.80	0.76	0.80	1.56
15	Australian fodder....2 parts Palay....1 " Corn....2 " Oats....1 "	1.48	3.02	4.50	0.98	2.00	2.98
16	Oats....50 kgm. Corn....44 " Australian fodder....62 " Palay....86 "	1.50	2.50	4.00	1.64	1.66	3.30
17	Palay....1 part Oats....1 " Australian fodder....2 " Corn.... ½ "	1.65	3.26	4.91	1.00	1.46	2.46
18	Australian fodder....31 kgm. Oats....22 " Palay....60 "	1.12	2.50	3.62	1.20	1.20	2.40
General average....		1.575	2.643	4.218	0.579	0.834	1.413

[a] Parts in all mixtures indicate volume.

COCONUT CULTURE IN BALBAGON ISLAND, CARLES, ILOILO[1]

AMADO A. ANDRADA

WITH TWO TEXT FIGURES

On December 27, 1926, I went to Balbagon with Mr. Marcial Aclaro, the son of Don Eugenio Aclaro of Estancia, Iloilo. The purpose of my visit was to see the actual culture of coconut on what is said to be one of the best new plantations in my home town, Carles, Iloilo. I was then to write a report on the plantation as part of my work in Agronomy 16 in the College of Agriculture.

Balbagon is an island situated between the islands of Gigantes and the island of Panay. The shores of this island are steep, consequently the water near it is deep. Steamships going to Manila pass by this island so close that the rows of the coconuts in the plantation can be clearly seen.

In the early days of American administration in the Philippines this small island was owned by three persons who still reside on it. They tried to raise coconuts but failed three times. The most important cause for the failure was the lack of capital to maintain a clean plantation and to remove trash that makes good breeding places for the coconut beetles.

It was in 1920 that a rich merchant from Estancia, Don Eugenio Aclaro, landed on Balbagon Island and was impressed by the possibility of making a splendid coconut plantation on it, if only enough precaution could be taken against the coconut beetles. He sought for the owners and asked them to sell the whole island to him. Being very poor, they agreed to do this and in October, 1921, the island became the property of Don Eugenio. He was very ambitious to make a good plantation so he made his plans before he began work. He sent additional laborers to the island and furnished housing for them.

SOIL AND CLIMATE

According to many old experienced farmers, sandy loam soil is the best soil for coconuts especially when it is located by the seashore. This island has this type of soil and of course all the land is near the sea. These conditions make an ideal place for coconut production.

Upon examining the soil, I found shells and sand mixed to a depth of about three to four meters. From this evidence I concluded that this island is of marine origin.

[1]A paper presented in partial fulfillment of the requirements in Agronomy 16 (Coconut and other Oil Plants).

The soil, as a whole, is sandy loam and it is very uniform throughout the island. The surface soil is about twenty-five to thirty centimeters deep. The color is brown at the surface and dark brown just below with some whitish gravel and shells. The soil is not stony, but loose and easy to cultivate. This condition of soil denotes excellent aëration, a soil quality needed by coconuts.

The subsoil is whitish in color and contains very little organic matter. It is a mixture of sand and gravel. If the surface soil were removed, I do not believe crops could grow in the subsoil for there is no sign of fertility. No hard tuff is seen even if the soil is dug four meters deep.

The water table of this soil is about three meters deep. This gives allowance for good aëration. Water can be seen by digging to a depth of three meters. According to the residents on this island, the water follows the tide of the sea. When the tide is high the water in the wells is deep. Although the land is so level that there is no standing water from higher elevation, the water is not salty. It is good drinking water even during the longest dry season. As to why in such a narrow island the water is fresh throughout the year, even during the longest dry season, is hard to explain. This island is about three meters above the sea level.

In rainfall the island is similar to northern Panay. The dry season is only two or three months long. The rainy season is longer but the rain is not very heavy. The wind blows almost all the time. As there are few typhoons in the western Visayan Islands there is little danger in this island from such storms. So far no damage has been done to this plantation by typhoons.

METHOD FOLLOWED IN ESTABLISHING THE PLANTATION

Don Eugenio ordered his tenants in Estancia to select coconut seeds for him to use on this island plantation. Three thousand nuts for seedlings were sent after rough selection was made directly on the trees. The basis of selection was prolificacy and size of the nuts of the mother plants. Only well-matured nuts were used.

While seed selection was going on in Estancia, cleaning was proceeding on the small island. The laborers were paid on contract basis and on daily wages basis, ranging from seventy centavos to one peso a day.

The heaviest work in clearing was cutting down the trees and digging up the stumps. Practically all the trees were cut down and the roots were dug up and burned so as to remove possible breeding places for coconut beetles. Then the field was plowed and planted to corn on May 1, 1922.

On May 15, 1922, the three thousand seedlings were planted by the tenants on lots assigned to them on fifty-fifty share basis. That is, after planting, the tenant was to take care of the plantation. He might plant other crops of his own, provided the crops did not hinder the growth of coconuts.

When the coconuts become about ready to bear fruit, Don Eugenio will pay one peso to the tenant, for each coconut tree on his share. The tenants were given carabaos and are obliged to plow their lots in the plantation twice a year at regular intervals.

The tenants planted the trees at a distance of five *dupa*, or approximately nine meters apart. This distance is ideal for this plantation because there is a tendency for the plants to grow large leaves as they are larger in size than ordinary young coconuts of the same age in the College plantations.

Generally, each lot is cultivated twice a year, but some lots where catch crops are planted, are given more cultivation. The tenants plant camote, corn, onions, *cadios*, various legumes, ube, water melons, and other edible crops between the young trees. They even plant catch crops between the three year old coconut trees. (See fig. 1.) These vegetable crops are consumed by the tenants themselves, but if there is a surplus it is sold in Estancia where they sell the surplus fish they catch in the sea.

Fig. 1.—Showing camote planted as catch crop between three-year old coconut trees.

In the year 1923, another three thousand seedlings were planted on the island. As the soil is loose and sandy, the method they used in planting is very simple. A heavy hoe was used for digging and the seedlings were planted and covered as usual, only the rows were carefully lined and were made as straight as possible. Sticks were placed before holing to locate the places the holes were to be dug. The trees were planted in squares.

In May, 1924, four thousand more seedlings were planted, some of which were used in replanting where seedlings had died in the previously planted fields. With the 1924 planting, coconut seedlings completely covered

the island. My estimate was that 9,500 trees out of 10,000 seedlings planted were still growing. In the part of the island where many trees died, owing to neglect and drought, the trees are not uniform as there is a mixture of small and large trees of different ages. Some coconut seedlings had died from neglect and others from the effect of the dry season.

PLANTATION LABOR

After buying the island, Don Eugenio increased the number of families in the island to fifteen, but only ten of these are tenants. The three former owners of the island are among the tenants and planted coconuts on the share basis as other tenants did. The five families that are not tenants are laborers working for daily wages. They do not have a share in the coconut plantation. After the trees were planted the tenant families worked on their lots without pay except what they got from their catch crops. The laborers composing the five families who work for wages make piles of stones around the island to prevent erosion by the waves.

In the months favorable for fishing, the tenants, as well as the laborers, fish and sell dried and salted fish in Estancia where they buy some of their clothing and food supplies.

Sometimes when group labor is needed, as in the planting of camote, all work together, thus making the work easy. A condition which is not found in many places is the absence of money for use in exchange for their local products. Any one can ask and receive without pay from another person any kind of product that is raised on the island. Buying and selling are practiced only in the sale of fish and purchase of rice, clothing, and other necessities in Estancia.

CONTROL OF PEST AND DISEASES

From my observation, I found no coconut trees attacked with any disease which is very harmful. Some trees, of course, are infested by coconut beetles, but not to a great extent because the tenants are rigid in the control. So far, coconut beetle is the only pest that attacks the plantation. This pest is one of the most important causes for the failures of previous attempts to grow coconuts in the island. It was the cutting down of all forest trees and burning them that helped much in the control of this pest. The owner pays five centavos for any larva, pupa, or adult coconut beetle caught on the island. According to Don Eugenio, there was a time when a woman, alone, could earn as much as twelve pesos a day in collecting coconut beetles. He said he spent about eight hundred pesos in the buying of the beetles alone. But now he is confident that only a very few beetles can be found in his island. There is no possibility of reinfestation for the neighboring islands are about eight kilometers away, which is too far for the beetles to fly.

PERSONAL IMPRESSIONS

I found it well worth while visiting this island. I observed the life of the people who are simple in their environment and character. They are

industrious and lovable. They do their work willingly, honestly, and faithfully. Their greatest aim is to make their plantation successful by following faithfully any instruction from the owner.

Through the help of these contented workers, everything on this island that the owner wishes to be done is done. The wise way the laborers are handled is one of the secrets of the success of this plantation. I noticed this when I visited this place, for the son of the owner, Mr. Marcial Aclaro, my companion and I were treated in the most hospitable way and in return we showed our appreciation of their courtesy. The people were proud to show to their master their work and their satisfaction was evident. From this I learned that the way employees and tenants are dealt with does much to determine the kind of service they give in return. I learned that these people often give greater amount of service to the master than their master pays them for. So much for the discussion of the plantation itself.

Some people speak of the Tayabas coconut as the most superior coconut tree, the same is said of Zamboanga trees, but I can say that Balbagon trees may be in line with these, if not even better in quality.

In figure 2 the size of the trunk of a four-year old tree can be seen. This tree will probably bear fruit in its fifth year. The trees are very green, showing that they are vigorous, not stunted. The luxuriant foliage which the plants possess denotes their capacity for manufacturing food for a rapid growth.

In all his coconut plantations, including Balbagon, Don Eugenio has about 12,000 trees which are bearing and about 19,500 trees which are about to bear. He said most of these trees had been planted under his direction and observation, so that he knows the actual condition of all his plantations. He told me that of all his plantations, Balbagon, which has only about 9,500 trees, may surpass all the others in production when bearing time comes, for there the trees are very vigorous and well cared for. Besides, the island is isolated, and it is almost free from pests and diseases.

Fig. 2.—A typical four-year old coconut tree in the plantation. Note the size of trunk.

NOTE: AN ENTOMOLOGICAL SURVEY OF THE PACIFIC

(Reprinted from *Science*, June 10, 1927.)

The conditions on many of the islands of the Pacific are rapidly changing. Mountains which were formerly covered by native forests are being denuded, or the original vegetation is being replaced by introduced species. With the changing conditions in plant life and the increase of commerce there are accompanying changes in the insect fauna. If entomologists are ever to know the insects of the Pacific area no time can be lost. It would be difficult to over-estimate the importance of a thorough knowledge of the native insects of this region either from a purely scientific or an economic point of view.

An entomological survey of the Pacific is being planned by a group in Hawaii. The Bishop Museum and the Hawaiian Sugar Planters Association have each pledged financial support over a period of five years, and it is likely that the Association of Hawaiian Pineapple Canners will join with them. A local committee has been organized with Dr. C. M. Cooke, of the Bishop Museum, as chairman, assisted by John E. Russel, chairman of the experiment station committee of the Hawaiian Sugar Planters Association, Charles R. Hemenway, chairman of the board of regents of the University of Hawaii, Charles S. Judd, executive officer of the Board of Agriculture and Forestry, and A. L. Dean, director of the Experiment Station of the Association of Hawaiian Pineapple Canners. This committee, no one of whom is an entomologist, has secured Dr. C. F. Baker, dean of the Agricultural College of the University of the Philippines, to be the scientific head of the survey. Dr. Baker will have his headquarters in Honolulu. The present plans contemplate one or more field parties which will send all collections to Honolulu where some material will doubtless be identified, but much of it will be sorted and sent to the specialists to work up. According to the present plan Dr. Baker will devote all his time during the first year to the work of the survey, and in subsequent years divide his time between that and the University of Hawaii.

A. L. Dean.

ABSTRACT

Tenancy on rice holdings in the municipality of San Felipe, province of Zambales. JUAN PRONTO. (*Thesis presented for graduation, 1924, from the College of Agriculture No.* 257; *Experiment Station contribution No.* 464).—The survey was conducted in the field in the municipality of San Felipe, Zambales, in the early part of 1923. The "survey" method was used. One hundred representative holdings in different parts of the municipality were selected. Several landlords, but tenants for the most part, were interviewed in the collection of data. Results were divided into economic and social phases.

Results of the economic survey.

1. The average area to a tenancy in San Felipe, Zambales, is 1.96 hectares, of which 97 per cent is under cultivation for rice. Crop rotation is not practiced. The 100 holdings are divided into 306 parcels.

2. The average length of tenure is 5.5 years, a short period in which to make permanent improvements on the land.

3. Eighteen per cent of the tenants hold double tenancies, showing a desire for wider area. Forty-two per cent of the tenants have always been tenants, the remaining 58 per cent had followed, formerly, occupations of various kinds.

4. The terms of the majority of contracts are: The division of the crop based on the valuation of one-third for labor, one-third for work animal, and one-third for land.

5. The tenant's investment on capital goods averages ₱259.92, or ₱142.41 a hectare.

6. The tenant spends an average of 1287 hours of labor each year, of which 1089 are devoted to agriculture and 198 to secondary occupations. He spends 1013 hours on his tenancy or 519 hours a hectare. The total average animal labor used is 385 hours, or 196 hours per hectare.

7. The gross income, including secondary and household industries, of each tenant averages ₱204.43 which is hardly enough to support a family of 5.35 persons. The average agricultural income is ₱153.08 per tenant. The tenant works on his tenancy for his labor wage only.

8. The tenant gets more per hour wage from secondary occupations than from agricultural labor.

9. Thirty-three out of the 100 tenancies received advances from the landlords in form of palay, the value ranging from one to twenty pesos. The rate of interest when computed ranges from 12 to 33 per cent.

10. Only 13 per cent of the tenants surveyed own land, the average for each tenant is 0.95 hectare, or an average of .124 hectare for the entire survey. It will take, therefore, 85.2 years for each tenant to become owner of the land equal to his present holding.

Results of the social survey.

1. The tenants are all male, with an average age of 44.7 years, and have been married, although ten are widowers. The average age at marriage of male is 20.62 and 19.17 years for females.

2. There seems to exist a tenant class in the regions surveyed although their number is not considerable. The percentage of stability is 71.

3. There is practically no blood relationship between landlords and tenants.

4. The average size of the family for the region surveyed is 5.35 persons. The percentage of mortality of children born is 35.

5. The majority of houses and yards were kept fairly clean. Toilet facilities are very poor.

6. The general literacy for the entire region is 56.38.

7. Cockfighting is not popular in the region.

8. Informal co-operation in economic and social life of the tenants exists.

9. The political right of the tenants is not controlled by the landlords. The tenants however exert but little influence in the community. Fifty-nine of the one hundred tenants are electors.

10. There is a general desire for the acquisition of homesteads but the tenants lack the information and facilities for getting them.

Abstract by Francisco M. Sacay
Of the Department of Rural Economics.

A wise man knows an ignorant one, because he has been ignorant himself, but the ignorant cannot recognize the wise, because he has never been wise.—*Persian Proverb.*

EXTENSION DIVISION NOTES

Personal Management vs. Absentee Landlord

Pantaleon Bautista, B. S. '18, may be called an example of modesty. While he was in College he never made mention of his family's wealth. He was simple in every way, in dress as well as in living, and in his whole deportment towards his fellow students. The only difference that singled him out from most of his companions in College was that he was older, having at home a wife and children. Also, that he was among the few who came to College with a definite life object in view. His agricultural education was to fit him to develop a hog industry. Since leaving College Mr. Bautista has not sought publicity or popularity any more than when a student.

Only about two months ago two professors of the College of Agriculture discovered what Mr. Bautista has been doing since graduation, as a part of his contribution to the commonwealth. Looking for a co-operator in a study of life history and habits of bangos, *Chanos chanos* Chanidae, being undertaken by the Department of Zoölogy and Economic Entomology the two professors called at the residence of Mr. Bautista's parents in Malabon, Rizal. They not only secured the desired co-operation and an ample supply of fish samples from the extensive fishponds of the Baustista family, but were told of Mr. Bautista's work for the past nine years.

Being an only child, he might well have followed the time-honored custom of living with his family in the paternal home which is a large house with all modern conveniences. Here a life of ease and comfort, light work under the direction of his father was waiting for him. But he chose to make his own life.

He went to Orani, Bataan, and assumed personal management of the family sugar and rice farm. Here he began to carry out his plan of student years, hog production. He went about this work in the following manner:

Accompanied by a man thoroughly familiar with local conditions he went to Jala-jala, Rizal, and carefully selected his foundation stock. He secured eight of the best Jala-jala sows he could find, and one of the best Berkshire boars he could get at the Alabang Breeding Station of the Bureau of Agriculture. This stock including all transportation expenses costs him ₱200. On his farm, simple bamboo and nipa sheds with suitable compartments, stalls, and pasture lots, concentrated feed and water supply were provided. His rotation pastures were planted with camote and peanuts. He did not buy feed as he used the by-products of rice and sugar grown on the farm, supplemented with the pastures. He so trained his hogs

that they came to their own respective stalls and compartments; did not go astray. Hence there was no difficulty in keeping them separate to note individual performances in litter production as well as in other desirable features. Mr. Bautista's aim was to produce as fast as he could the greatest number of grade pigs and place them on the market at the shortest possible intervals after they had been weaned and attained the best marketable age. Selection was carried on in accordance with his objectives. For the disposal of his output he gradually built up a market right in his home town, Malabon, where his hogs gained popularity and were sought for their tameness and excellent qualities in conformation, vigorous growth, and early maturing for the dual purpose of meat and fat production.

Though he gave most of his attention to his hog industry Mr. Bautista also directed the general work on the farm, especially that relating to sugar cane and rice, improving the methods of production and turning out products that could sell for the highest price. His farm consists of 72 hectares, of which 62 are devoted to sugar cane and the rest that is low to lowland rice. The remaining highland is used for his hogs and miscellaneous small crops. He found that it was much more profitable to sell the sugar cane juice than to make it into muscovado sugar. He sells the juice right on the farm to traveling buyers from Bataan or from Pampanga.

This cane juice is used to produce *patcohin* (small *panochas* or brown sugar of the candy consistency); *guinaockin* (sticky molasses); and *carabahin* (molasses just beginning to crystallize, used for peanut candy). For these forms of sugar, Bautista found the sugar cane variety known as *Sinanduyong na puti* to be a suitable variety.

Just as Mr. Bautista was highly optimistic about his hog industry, his father, old and overburdened with the management of the family's fishponds in Malabon and in Lubao, urged his son to run the farm at Orani as an absentee landlord and come to the family home and relieve him. So Pantaleon entrusted his hog business to the best of his tenants. While the other business on the farm practically returned to the old status, that is a farm worked by share tenants under an absentee landlord's direction and only visited by him when the harvest season comes, the hog business very soon began to decline, and soon it did not pay to go ahead with it.

Mr. Bautista said that after balancing the business, the figures showed that he made in his hog industry a net profit of ₱300 for an investment of ₱1,000 after running it for about one year and a half.

Correction of Address

Andres L. Pacis, B. Agr. '25, writes from Bayombong, Nueva Vizcaya, that his address given in the August number, THE PHILIPPINE AGRICULTURIST, should be changed to P. O. Box 25, Bayombong, Nueva Vizcaya. He further states that 60 hectares of rice land now demands his attention. He says "that for those who like to work Cagayan Valley is extensive and good enough for the display of their energy."

The Fish Pond Industry

The sources of the bangos fry sold at Malabon are Marinduque, Bauang, and San Fernando, La Union; Boac, Marinduque; Salinas, Cavite; Bucao, Zambales, and as far distant as from the island of Negros. They are usually caught in April and May. The fresher they are brought to Malabon for sale the better the price, and the surer their growth in the ponds. Strangely enough fry arriving at Malabon as late as the month of August when they have attained one inch (2.54 cm.) in length are not desirable for seed; when placed in the pond they are said to suddenly disappear leaving no trace of their existence. No explanation for this is known. All fishponds are thoroughly cleaned of injurious and harmful matter before the fresh fry are turned in. The fry are sold in earthen pots of different sizes. For example, Bauang pots usually contain 1,500 fry; Zambales pot from 3,000 to 4,000; Negros, 10,000. Customarily, large pots are sold at ₱10 each and small pots at from ₱2 to ₱3 each. The Negros pots are the cheapest, selling at ₱6 each. Since their comparative recent appearance on the Malabon fry market they have stirred up a lively competition. Experienced fishpond men readily estimate the number of fry in each container. They seldom miss by a hundred. When actual count is resorted to the buyers pick out a number of pots of uniform size that contain the least number of fry. Then the count of every lot of the same size of pots is based on the pots whose content has been counted.

In growing the fry in the nurseries, they are first put in small compartments, the size of which is dependent upon the number of fry; as they grow larger they are transferred from one compartment to another or from pond to pond of increasing size until they are large enough to be put in the final rearing pond. Their vigor of growth depends much upon the size of the pond, the amount of feed and the number of the fry. They can be kept stunted by confining them in a small compartment on a reduced amount of feed. In fact, when the supply of bangos is greater than the demand and no compartment is available in the final rearing ponds, the fry are kept undersized until prices become normal and room is available. Ordinarily, it takes a month for fry to attain a size suitable for transplanting into the final ponds where they are reared and developed to a marketable size.

At Malabon they make it a special business to produce nursery stock for sale to outlying fish-pond growers. One hectare of nursery pond may contain about 250,000 fry. Fry one month old sell for ₱5 a 10,000. Final harvests from large ponds usually occur when fish are from six to seven months old. In one man's ponds at Lubao the fish are harvested when ten months old and sold at from twenty-five to thirty centavos a piece. The fish are caught in nets. To facilitate the catching, the brackish, or sea water adjoining the ponds is let in through the pond gate. All the fish in the pond rush towards the incoming water and crowd together; then they are easily caught in nets. This process is locally called *pasuba*. This

habit of the bañgos is a source of heavy loss when the ponds are flooded by heavy rains. When the ponds overflow it invariably means a total loss to the grower of the bangos. Only crabs and shrimps and other stray fish of small consequence are left in the pond. This is the reason fishpond owners are always on the watch in caring for the dikes; in flood times an extra number of laborers is always on hand with spades and shovels ready to rush work in building up the dikes higher than the level of the flood water to prevent loss from overflowing. In fact this item is the largest of all items of expenditure in keeping up the ponds. There are other sources of damage of minor importance. Lately a small species of fish of unknown origin has made its appearance in nursery ponds and has multiplied rapidly devouring a lot of young bangos and causing a considerable amount of damage.

Fish ponds vary in size. The size depends upon the extent of the area, lay of the land and the convenience of the grower in handling. One fishpond at Lubao covers about 50 hectares and is large enough to accommodate 100,000 nursery stock that will be caught at the age of ten months. Under ordinary conditions the percentage of success from the final catch ranges from 50 to 75 per cent.

As a common practice fishponds are cleaned in the month of March for the reception of new stock. The water is drained off and the whole of the pond is exposed to the sunshine. By so doing, new voluntary growth of moss upon which the bangos feed springs up over the muddy bottom. Gradually then the brackish water from the adjoining river is let in to stimulate the vegetative growth, the submersion of the moss being gauged by the degree of its growth so as not to shut out the influence of the sunshine upon it. When luxuriant growth of the moss is obtained, the water is let in at a suitable depth for the reception of either the fry or the grown nursery stock. It was shown in the fishponds that one species of moss is allowed to develop for the fry and another for the larger fish. Presumably each specific kind of moss is obtained through careful gauging of the water allowed into the ponds at the time new growth of moss is developed.

For the maintenance of one man's seven fishponds at Lubao, Pampanga, ₱2,000 a year are spent. The owner said that as many as fifty men at ₱2 a day are employed from time to time, mainly to keep the dikes in repair and prevent damages from floods.

The running of the pond is entrusted to a manager under the supervision of the owner. The manager is usually experienced in fishpond operations. A contract is entered into between the manager and the owner on the basis of share arrangement upon the number of fish caught. Under Malabon conditions where nursery stock is raised, the share is fifty-fifty of the total produce between the manager and the owner. At Lubao, where the nursery stock is grown to a marketable size, the manager gets one-third of the harvest and the remaining two-thirds go to the fish-pond owner.

The industry of fishpond culture is pronounced at Malabon as elsewhere in the Islands to be one of the most highly profitable industries, and, like coconuts, less exacting of the owner's time and energy than many

other agricultural industries. It is a specialty undertaking, and as such and as against a diversified enterprise it has no alternatives. It requires an investment of practically the same amount as the amount lost. But under ordinary circumstances, it is said that for one year's loss it takes but the success of the next crop for the owner to recover and make a reasonable profit on the investment.

Continued Interest in the College Copra Drier and Colotcolotan sacks

Judge Felix Samson of Isabela and Messrs. Salvador Muñoz and Vicente Ramos of Camalig, Albay, came recently to visit the College and examine the structure of the new College Copra Drier. They were inquiring for a man from the College to direct the construction of a drier at the town of Camalig as a demonstration to Camalig copra producers. The expenses for the construction to be borne by them.

Messrs. Antonio Caballeros and Gregorio Arellano from Sorsogon, Sorsogon, and, also, a party of Japanese came very recently to study personally the details in construction of the copra drier. The College drier has not been repaired since it was damaged by the storm last November, so we can show only the ruins to these visitors. But they got a clearer picture of the structure by personal inspection with the help of explanation and the Circular No. 11, on the drier than by correspondence.

Mr. J. Campos, Vice President of the Campos Rueda Hermanos, Inc., in Manila, accompanied by his engineer, made a visit on the Campus for the main purpose of getting a sketch of the copra cutter which was devised by Professor Henares in conjunction with the College Copra Drier. He was anxious to buy one to be used in his coconut plantation in Palawan to save the trouble of cutting copra with a bolo and to reduce expenses; but the College is not in a position to manufacture this new device for sale. Doctor Roxas explained to them the make-up and the handling of the apparatus and allowed them to copy it and make one themselves. According to actual trials "a copra cutter of this design * * * can chop the meat from 100 nuts in 3 to 5 minutes, whereas with a bolo and for the same number of nuts a woman will require from 20 to 25 minutes."

Mr. Campos also went over the drier for the possibility of introducing it on his coconut plantation in Palawan. He was very much interested in the sacks of *Colotcolotan* fiber woven into rice and copra sacks under the direction of Dr. Vicente Aldaba of the Department of Agronomy. He took with him samples of the fabric and a specimen of the plant from which the fiber is extracted. This plant is a wild plant and is considered a troublesome weed almost everywhere. There is a lot of them in coconut plantations and in neglected places. The sack made from this fiber as woven in a crude native loom by the College fiber class is very much like the imported jute sacks from India. Many of our visitors believe the *Colotcolotan* to be stronger. The making of fiber for these sacks would make a profitable household industry, especially for our country people, and a good industrial exercise for our schools.

EXCHANGE NOTES

A few years ago, the Research Staff of the California Fruit Growers Exchange evolved a process for preparing pure orange juice, in concentrated form. The product is made from sound fruits, carefully washed and selected. The juice is expressed and immediately evaporated in glass-enamelled vacuum pans at a temperature of 98°F. The concentration reached is 7 to 1 by volume. The concentrate is run into sterilized glass jars, which are immediately closed with sterilized corks. Careful tests have shown that orange juice concentrated in this simple way retains its flavour and vitamin activity, even after storing for several months.

—*Tropical Agriculture.*

Too much water is one prime cause of tomato plants dropping their blossoms and failing to set fruit. We have many inquiries about this deficiency from those who state that the vines are large and vigorous. Too much water produces rank vegetable growth and often, when tomatoes fail to set because of lack of pollination, the cause is climatic, but when blossoms drop the cause is usually excess of water. Vigorous vines may safely be left without water at blooming time until the leaves wilt. Then irrigate.

—*Cultivator* (California).

In order to sustain our population, it was necessary to import over seventy million dollars worth of rice. Nor was Malaya the only Eastern nation that was unable to feed her population without depending upon the three main sources of supply viz. India, Siam, and French Cochin China. In 1920 China, Japan, Korea, the Philippine Islands, the Nertherland East Indies, and Ceylon obtained 1,097,000 tons for this purpose. In 1925 the aggregate imports of rice to these countries had risen to 2,306,000 tons. The importers include China, whose imports of rice during that period rose from 70,000 tons to 752,000 tons. Not only are the rice imports of these nations increasing from year to year, but there is a growing tendency for them to turn to India for their supplies. This is because India alone has been able to produce and export rice to meet this increased demand. As an instance of this growing reliance on India may be cited the example of Japan which imported from Burma one ton of rice in 1920, a figure which rapidly increased to 199,832 tons in 1926.

—*The Malayan Agricultural Journal.*

For the first time since avocados began assuming an importance in Southern California agriculture, there was an overproduction this year—the crop amounting to 1,500,000 pounds more than the previous year's crop of about 500,000 pounds—and this surplus production is being successfully disposed of in the east by means of a direct mail advertising campaign directed to eastern chefs.

In this advertising the chefs of big hotels and eating places have been told about the new fruit, have been shown how to use it in salads and in other ways for the purpose of giving a novel "kick" to menus and as the result of this campaign as much of the fruit is now being sold in New York City as is being sold in Southern California. * * *

The price obtained for the crop this year is averaging between 20 and 35 cents per pound to the grower, which has brought returns averaging from $750 to as high as $2,000 an acre.

—*Cultivator* (California).

In 1926 United States exports of men's collars and cuffs were valued at $570,207, of which Latin American countries took 64 per cent. The United Kingdom and its colonies were the next largest customers, having received about 19 per cent of the total exports. The Philippine Islands purchased over $30,000 worth and comprise one of the largest individual foreign markets for American collars and cuffs.

—*Commerce Reports* (United States).

A survey covering 126 poultry ranches brooding 221,932 chicks shows the total expenses of chicks, feed, labor, depreciation, interest, fuel and litter for brooding 1,000 chicks to be almost $105 for 1000 chicks. This leaves the net expense of brooding 1,000 chicks to three months of age at $245.

Figuring the average mortality, about 440 pullets will remain on the ranch, making the cost per pullet of about 55 cents when they are raised from baby chicks.

—*Cultivator* (California).

There is enough nitrogen above an acre to grow 70,000,000 bushels of corn, according to Dr. F. C. Bauer, University of Illinois. The only practical way to get this into the soil where it is available for crops is through the use of legumes.

—*Prairie Farmer* (Illinois).

COLLEGE AND ALUMNI NOTES

Dr. B. M. Gonzalez was elected on September 3 member of the Board of Directors of the Pampanga Sugar Development Co. This sugar central has just paid off its indebtedness with the Philippine National Bank, being the first of the bank centrals to accomplish this feat.

Dr. Shuta Kinoshita, Chief Entomologist of the Imperial Agricultural Experiment Station, Nishigahara, Tokyo, Japan, was a Campus visitor on September 5. Doctor Kinoshita is on a six months' survey trip of the East, studying parasites of the rice borer for possible introduction into Japan. From the Philippines he will proceed to Borneo, Java, Indo-China, and India.

Mr. Clyde C. Coulter, Field Secretary of the American Mission to Lepers, Inc., addressed the Student Body in August. Mr. Coulter told in a concise, forceful manner of the enormous numbers of lepers in the world and what is being done to lessen their suffering, and what science is doing in finding a permanent cure for the disease. Mr. Coulter made a strong plea for each one to do what he can to help rid the Philippines of this, "the most terrible disease in the world." In the Philippines, small country as it is, the estimated number of lepers is around 15,000.

Dr. Nemesio B. Mendiola, who was in residence in Java for one year as a Rockfeller International Education Board Fellow, returned to Los Baños, August 24, 1927. Doctor Mendiola has been appointed acting head of the Department of Agronomy, effective August 31, 1927.

Dr. Manuel L. Roxas and Prof. Cecilio Alincastre, both of the Sugar Technology Division are again on leave without pay for the second semester of this year. Doctor Roxas is Cane Technologist for the Philippine Sugar Association and Professor Alincastre is Superintendent of the Lopez Sugar Central at Fábrica, Occ. Negros.

Professor Hilarion G. Henares of the Agricultural Chemistry Department is now connected with the Earnshaw Docks and Honolulu Iron Works as constructing engineer. He is at present in charge of the construction of the new Lopez Sugar Central located at Fábrica, Occidental Negros.

After a stay of three years in the United States where he studied Agricultural Engineering, specializing in irrigation, drainage, and sanitation at the universities of Colorado and Cornell, Dr. Alexander Gordon, B. Agr., '23, returned to the Philippines on the *S. S. President Taft* on August 18. Doctor Gordon reported for duty on August 29 in the Department of Agricultural Engineering.

Doctor Gordon received his master's and doctor's degrees from Cornell University.

The Chemistry "L" and the biological laboratory are now completed and in use. Part of the "L" is used as a lecture room for general chemistry; the Experiment Station Food Laboratory is in another part. This arrangement temporarily relieves congestion in the Chemistry Department laboratories. The biological laboratory will house the experimental animals used by Doctor Santos and Mr. Collado in connection with nutrition experiments.

The School of Forestry Wood Still Plant is now in operation. The plant was constructed and will be run by the School of Forestry in cooperation with the Department of Chemistry of the College of Agriculture.

Work on the Armory–Gymnasium for the Los Baños Colleges is now in progress. This building will be used for auditorium also, as the present hall is not large enough to accommodate one-half the student body.

Mr. Victorino M. Kilayko, Assistant in Chemistry, resigned August 31, 1927, to accept a more remunerative position with the Bacolod–Murcia Milling Company in Negros. Mr. Kilayko is a B. S. in Sugar Engineering from the University of Louisiana, Class of 1926.

Mr. Victor Sulit, Instructor in Agricultural Chemistry, sailed for the United States on the *S. S. President Taft*, on August 20, 1927. Mr. Sulit goes as University Fellow to the University of Chicago. He will major in general chemistry and study rubber as a minor subject. He also plans to visit different industrial plants in the United States and Europe after obtaining the doctor's degree.

Mr. Hermenegildo R. Rosales, B. S. A., '26, (Sugar Technology Curriculum) visited the College on September 7, 1927. Mr. Rosales came to take his oral examination for the Certificate in Sugar Technology. While away from his post he attended the Fifth Annual Convention of the Philippine Sugar Association as a delegate from Isabela, Occidental Negros, where he is employed as a Planters' Chemist.

With Dr. Gregorio San Agustin tossing the first ball and Physical Director Gerónimo Suva refereeing the first basketball game, the 1927–1928 U. P. Los Baños Athletic League was begun August 23, with a large attendance of faculty members and students from the Los Baños Colleges. In the opening games in basket ball, the Veterinary team won a hard-fought contest from the Forestry team, 26–24, while the C. A. Seniors easily defeated the C. A. Juniors, 54–24. In the first volley ball game of the League, the C. A. Sophomores were victorious over the C. A. Freshmen in two straight sets, 21–16, and 21–13.

All League games are scheduled to be played on Tuesday and Thursday afternoons.

The standing of teams to date (September 9) follows:

Basket ball		*Volley ball*	
C. A. Seniors	30 points	C. A. Sophomores	20 points
Veterinary	20 "	C. A. Preparatory	20 "
C. A. Sophomores	20 "	C. A. Juniors	15 "
C. A. Freshmen	10 "	C. A. Freshmen	15 "
C. A. Preparatory	10 "	Veterinary	10 "
C. A. Juniors	0 "	C. A. Seniors	5 "
Forestry	0 "	Forestry	5 "

Every Wednesday afternoon a special girls' class in Physical Training for the eighteen co-eds in the College of Agriculture is being conducted by the Department of Physical Education. Elementary gymnastics, marching, folk dancing, games, and outdoor sports are given in the course.

The Association of Junior Sugar Technologists celebrated Sugar Technology Day, August 26, with a program in the Auditorium in the evening, and were hosts the following evening at a dance. Among "off-the-Campus" guests were women students from the U. P. and Philippine Normal, and from Lipa and Batangas.

Features of the program were a talk on the Sugar Situation in the Philippines by Dr. Manuel Roxas; a short drama "A Romance of Miss Sugar Cane," written by a member of the club; and a recitation "Curfew Must Not Ring Tonight" by Miss Gonzales of Manila. Piano selections by Misses Imelda Katigbak and Soledad Arguelles of Lipa and a vocal duet by Miss Mamerta Manahan and Lieutenant Catalan and a solo by Miss Manahan, were the musical numbers. Special attractions were the "Balitao," a Filipino dance, by Miss Rosario Maralit and Mr. Vicente Umali of Batangas, and selections on the harmonica by Shogo Uno of the College.

The personnel of the Department of Physical Education for this year is: Director Gerónimo Suva; Instructor, Ramón P. Tolentino, Jr.; Assistants Jacinto B. Leoncio and Sixto L. Sison; Property Custodian, Hermenegildo Masaya.

The committees for the year for Los Baños Colleges Athletic Association are:

Athletic Management: Dr. B. M. Gonzalez and Roberto Betia (Agriculture), Dr. Gregorio San Agustin and Lieut. Nemesio Catalan (Vet. Science), Prof. Carlos Sulit and Juanito Ilustrísimo (Forestry), Lieut. Amado Martelino, Mr. Alfredo Yñguez, and Mr. Ramón P. Tolentino, Jr., Members Ex-Officio. Mr. Yñeguez is Treasurer and Mr. Tolentino is Secretary.

Intramural Athletic Committee: Mr. Ramón P. Tolentino, Jr., Chairman. Members from Agriculture: Roberto Betia (Senior), Felixberto Relova (Junior), José S. Austria (Sophomore), Filemón Ampog (Freshman), Antonio Garganta (Preparatory), Pedro Beriña (Vet. Science), Valentin Semilla (Forestry). Mr. Canuto Manuel is Coach for Freshmen and Mr. Pedro Rodrigo for Preparatory.

The team Coaches are: Baseball Dr. Angel K. Gomes; basket ball, Dr. Alexander Gordon; soccer football, Ramón Hofileña; track and field, Mr. Ramón P. Tolentino, Jr.